

DRAFT

Chesapeake Hatchery

Ten Year Area Management Plan

FY 2015-2024



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OVERVIEW

- **Official Area Name:** Chesapeake Hatchery, #4602
- **Year of Initial Acquisition:** 1937
- **Acreage:** 118.9 acres
- **County:** Lawrence
- **Division with Administrative Responsibility:** Fisheries
- **Division with Maintenance Responsibility:** Fisheries Division will be the primary division responsible for maintenance of Chesapeake Hatchery. Design and Development and Outreach and Education divisions will lend support for building maintenance and for locations specific to special fishing events.
- **Statement of Purpose:**

A. Strategic Direction

The primary responsibility of Chesapeake Hatchery is to produce warm- and cool-water fish species, as requested by management and research biologists. Secondary responsibilities include: providing information and education to the public about warm- and cool-water fish culture, recruiting and retaining anglers, managing aquatic resources, promoting the Missouri Department of Conservation's (the Department's) programs, managing and restoring natural communities, and providing compatible recreational opportunities to area users.

B. Desired Future Condition

The desired future condition of Chesapeake Hatchery is to maintain and improve area facilities in order to provide efficient production of quality fish, consistent with the Department's overall goals. Chesapeake Hatchery will promote public awareness through fishing opportunities and hatchery programs. Preventing the establishment and spread of aquatic and terrestrial nuisance species is also a priority for the hatchery.

C. Federal Aid Statement

This area, or a portion thereof, was acquired with Dingell-Johnson Sport Fish Restoration Funds to restore and manage sport fish, conserve and restore sport fish habitat (or a buffer to protect that habitat) and provide public access for sport fishing.

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

A. Priority Areas: Chesapeake Hatchery is located within Turnback Woods Terrestrial Conservation Opportunity Area and is also within an Ozark cavefish recharge area.

B. Natural Areas: None

II. Important Natural Features and Resources

A. Species of Conservation Concern: Species of conservation concern are not known from this area. Area Managers should consult annually with the natural history biologist.

B. Caves: None

C. Springs: Chesapeake Spring, located on Department land, serves as the primary water source for the hatchery, with an average daily flow of approximately 1 million gallons of water. A smaller spring combines with it to provide water for hatchery operations. Chesapeake Spring's water temperature ranges from 55°F to 60°F. The pH ranges from 6.8 to 7.6 and the dissolved oxygen level ranges between 6.8 and 8.7 parts per million.

III. Existing Infrastructure

- 0.5 miles of paved roadways,
- 2 miles of gravel roadways,
- 3 paved public parking lots (1 ADA accessible),
- hatchery building (ADA accessible),
- 3 storage buildings,
- 2 workshops,
- 1 staff office (ADA accessible),
- double public restroom (ADA accessible),
- residence and residence storage shed,
- blower building,
- 4 separate well houses,
- cistern house,
- water storage tower,
- 3 chemical storage units,
- storage sheds for fishing poles and spawning equipment,
- 27 ponds:
 - 1 13.8-acre solar pond,
 - 13 one-acre ponds,
 - 10 half-acre ponds for fish production,
 - 1 0.4-acre youth fishing pond,
 - 1 0.4-acre hatchery effluent retention pond,
 - 1 0.2-acre sewage lagoon,
- 12 covered concrete raceways,
- covered concrete spring channel water distribution flume from spring to hatchery,
- rock spring enclosure and bridge (two limestone structures constructed during Civilian Conservation Corps era in association with Chesapeake Spring).

IV. Area Restrictions or Limitations

- A. Deed Restrictions or Ownership Considerations:** Chesapeake Hatchery is owned by the Missouri Department of Conservation. There are no deed restrictions.
- B. Federal Interest:** Uses of land acquired with federal funds may not interfere with the purpose for which it was acquired. Closures to sport fishing must be based on the recommendations of the state fish and wildlife agency for fish and wildlife management purposes. Federal funds may also be used in the management of this land. Fish and wildlife agencies may not allow recreational activities and related facilities that would interfere with the purpose for which the State is managing the land. Other uses may be acceptable and must be assessed in each specific situation.
- C. Easements:** In fiscal year 2015 a full title and deed request will be made to determine existing easements on land associated with Chesapeake Hatchery.
- D. Cultural Resources Findings:** Several of the structures on the Chesapeake Hatchery were built by the Civilian Conservation Corps and are considered historic. Cultural resource records are kept with the Department's Environmental Compliance Specialist. Managers should follow Best Management Practices for Cultural Resources found in the Department Resource Policy Manual.
- E. Hazards and Hazardous Materials:** There are two bulk fuel storage tanks (diesel 560 gallons and unleaded 560 gallons), three 500-gallon propane tanks and one 1,000-gallon propane tank. Three chemical buildings are used to store aquatic therapeutics and herbicides, as well as terrestrial herbicides.
- F. Endangered Species:** None observed.
- G. Boundary Issues:** In fiscal year 2015 a boundary survey request will be made to determine if there are any boundary issues with neighboring landowners.

MANAGEMENT CONSIDERATIONS

V. Aquatic Resource Management Considerations

Two small creeks, Chesapeake Creek and Dry Branch, flow through the area. These two streams flow into Turnback Creek, which eventually empties into Stockton Lake. A hatchery effluent retention basin remains on-site and is used during the production season to mitigate nutrient loading into Turnback Creek. Chesapeake Fish Hatchery intends to reduce the probability for introduction of unwanted pathogens and aquatic nuisance species into and out of the facility by following the hatchery Biosecurity Plan (Missouri Department of Conservation Fisheries Division, 2014).

Challenges and Opportunities:

- 1) Managing Chesapeake Creek and Dry Branch riparian corridors
- 2) Managing hatchery effluent
- 3) Maintaining biosecurity

Management Objective 1: Maintain and widen the current riparian corridors along Chesapeake Creek and Dry Branch to minimize bare soil and sediment transport.

Strategy 1: Discontinue the use of trails near streams to allow natural regeneration of native vegetation in areas with inadequate riparian corridor.

Strategy 2: Use mechanical methods and herbicides to control unwanted vegetation and nuisance species.

Strategy 3: Plant trees and shrubs, available from George O. White State Forest Nursery, along Chesapeake Creek and Dry Branch, as needed.

Strategy 4: Implement Best Management Practices (BMPs) on all area streams and follow guidance offered in the Watershed and Stream Management Guidelines (Missouri Department of Conservation Fisheries Division, 2009).

Management Objective 2: Maintain and utilize the pond and raceway lift stations to control nutrient loading into creeks on the area.

Strategy 1: Ensure proper use of wastewater lift pumps and avoid harvesting ponds during summer months when low flow conditions are present.

Strategy 2: Excavate and remove waste from the hatchery effluent retention pond, as needed, when optimum weather and stream flow conditions are present.

Management Objective 3: Keep a relevant Biosecurity Plan that outlines protocol to identify and reduce unwanted aquatic introductions (Missouri Department of Conservation Fisheries Division, 2014).

Strategy 1: All hatchery employees have a working knowledge of the current Biosecurity Plan (Missouri Department of Conservation Fisheries Division, 2014).

Strategy 2: Limit visitor access to sensitive fish production areas.

VI. Terrestrial Resource Management Considerations

Opportunities for terrestrial wildlife and habitat management exist in the area's northeast corner/old field, which was historically a dry-mesic chert prairie. The wooded portion of the area consists of land types that historically had low fire frequencies or are too small to make restoration with fire and thinning feasible.

Challenges and Opportunities:

- 1) Managing succession and controlling exotic species

- 2) Enhancing white-tailed deer forage

Management Objective 1: Manage succession and control exotic species in the northeast/old field portion of the area, while providing additional white-tailed deer forage options.

Strategy 1: Use a combination of herbicide application and judicious mowing to control woody encroachment and exotic species such as fescue, sericea lespedeza and Johnson grass.

Strategy 2: Establish three to five one-acre food plots, planted with a mix of cool-season annual cereal grains or orchard grass and cool-season legumes such as red clover, crimson clover and Austrian winter peas.

VII. Public Use Management Considerations

Chesapeake Hatchery offers educational opportunities for schools, youth and families who visit the hatchery to learn about warm- and cool-water fish culture, fishing and the Department's role in aquatic resource management. Chesapeake Hatchery also provides some opportunities for wildlife viewing, nature study, outdoor photography and picnicking.

Challenges and Opportunities:

- 1) Enhancing public opportunities for aquatic education
- 2) Providing an angling experience for youth

Management Objective 1: Efficiently operate the Chesapeake Hatchery.

Strategy 1: Provide scheduled educational tours of the hatchery to private and school groups.

Strategy 2: Maintain a variety of exhibits, with a focus on fishing and aquatic themes.

Strategy 3: As technology advances, upgrade or replace exhibits (focusing on aquatic themes).

Management Objective 2: Provide a catch-and-release fishing pond for special programs, including Discover Nature Schools, children, senior adults and other special interest groups. The Outreach and Education or Protection Divisions should schedule and staff fishing events in conjunction with the Chesapeake Hatchery staff.

Strategy 1: Maintain a quality fishery.

Strategy 2: Provide storage for Outreach and Education's fishing poles, tackle, bait and adaptive fishing equipment for special needs.

Strategy 3: Hatchery staff will provide assistance with events as time allows.

APPENDICES

Area Background:

Chesapeake Fish Hatchery is located 8 miles east of Mount Vernon on Highway 174. The hatchery is situated at the headwaters of Turnback Creek, a tributary of the Sac River and the upper Osage River. The hatchery complex and grounds total 118.9 acres. The hatchery complex occupies 40 acres, while the remaining area is bottomland forest, woodland, and old field set aside to provide quality wildlife habitat.

Chesapeake Spring is the main water supply for the hatchery's operation. Although, a smaller unnamed spring also contributes to the total daily water production of 1 million gallons or 500-1,000 gallons per minute (gpm). When more hatchery production water is needed, electrically powered wells (#3 and #4) can add up to 450 gpm each.

The land was originally purchased in 1926 under the old Fish and Game Department with two tracts of land totaling 117.2 acres. A total of 26.0 acres were purchased from Isaac L. Smith for \$4,250 along with 92.2 acres for \$10,500. The re-defining of State Highway 38 to Highway 174 accounts for the difference in today's surveyed area for the Department's ownership. A small fish hatchery was started by 1927. New hatchery construction was started by the Civilian Conservation Corps in the 1930s and was completed by the Works Progress Administration. These facilities were used until 1984. In 1986 a \$5.3 million renovation of Chesapeake Hatchery was started by using Federal Aid in Sport Fish Restoration Program Funds matched with agency money. Since the late 1980s, in order to meet present and future warm-water fish production needs, the hatchery has been upgraded with more modern equipment (Muich, 2013).

A 0.75-mile reach of the Chesapeake Creek borders the pond area along the north side. The entire hatchery complex is made up of 27 ponds. There are 13 one-acre ponds, 10 half-acre ponds, one Kid's Fishing Clinic pond, one pollution control pond, one sewage lagoon and one 3.8-acre solar-heated ambient water supply pond.

Both springs and the ambient pond provide single pass gravity flow to the hatchery complex, including the production room, all ponds and raceways. All the water used for fish production is either discharged into the Chesapeake Creek or pumped into the pollution control pond. This facility does not require an individual National Pollution Discharge Elimination System permit from the Department of Natural Resources because the pounds of feed used and fish produced are below the threshold for an individual permit.

Annually, an average of 9 million fish are produced at Chesapeake Hatchery, and more than 5 million fish per year are stocked. Fish species include: bluegill, channel catfish, largemouth bass, walleye, hybrid sunfish, grass carp, fathead minnows, with occasional commitments for flathead

catfish, hybrid striped bass, muskellunge and paddlefish. These fish are stocked primarily in public lakes and limited private impoundments (often associated with Kids Fishing Clinics); some are supplied to other states.

Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Restricted Hatchery Area	38.9		33
Woodland	28		24
Impounded Water	23		19
Bottomland/ Riparian Forest	19		16
Old Field	10		8
Total	118.9		100
Stream Frontage		1.5	

References:

Missouri Department of Conservation Fisheries Division. (2009). *Watershed and stream management guidelines for lands and waters managed by Missouri Department of Conservation*. Jefferson City, Missouri: Missouri Department of Conservation.

Missouri Department of Conservation Fisheries Division. (2014). *Biosecurity plan Chesapeake Fish Hatchery*. Missouri Department of Conservation.

Muich, S. (2013). *The history of warmwater fish hatcheries in Missouri*. Missouri Department of Conservation.

Maps:

Figure 1: Vicinity Map

Figure 2: Area Map

Figure 3: Current Land and Water Types

Figure 1. Vicinity Map

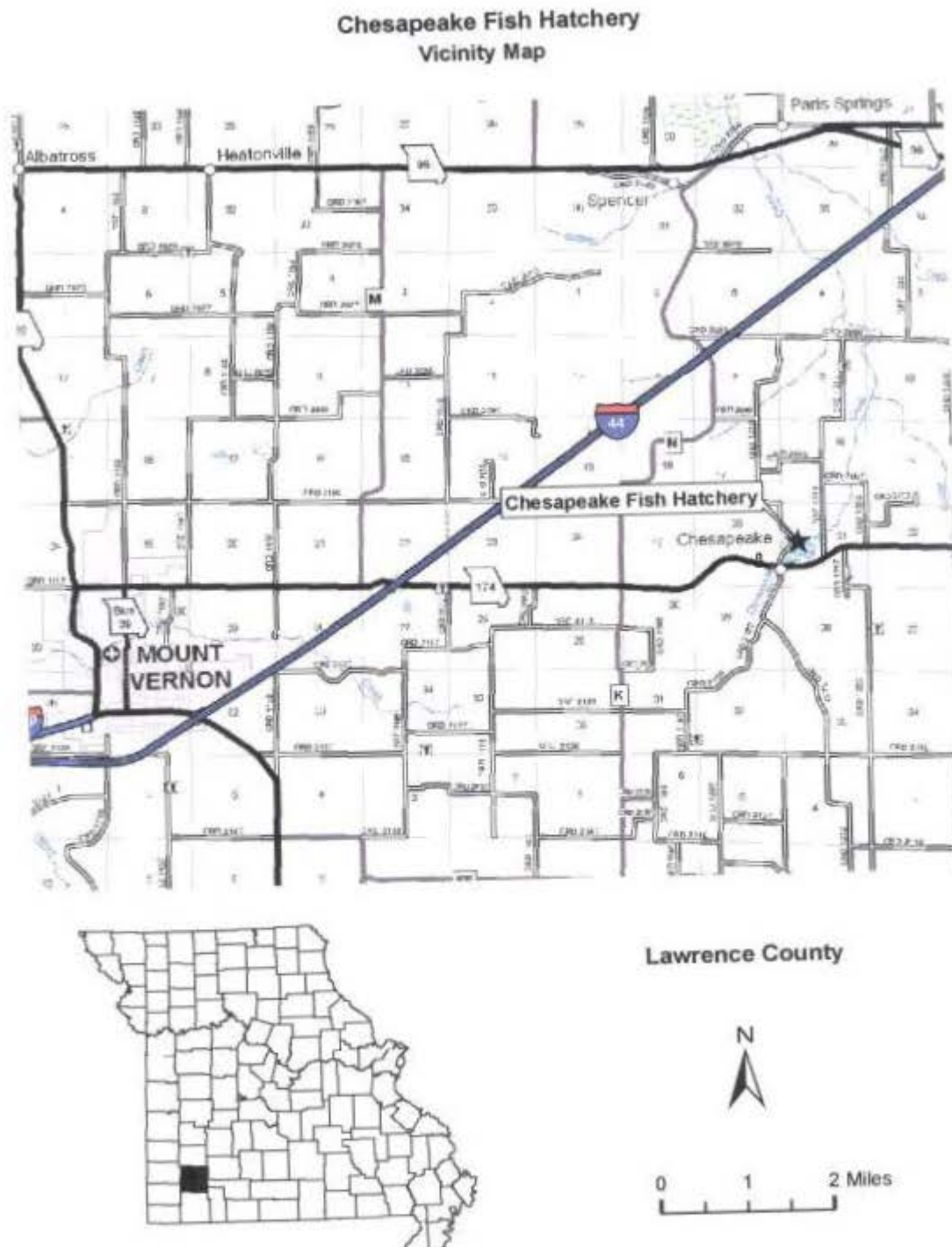


Figure 2. Area Map

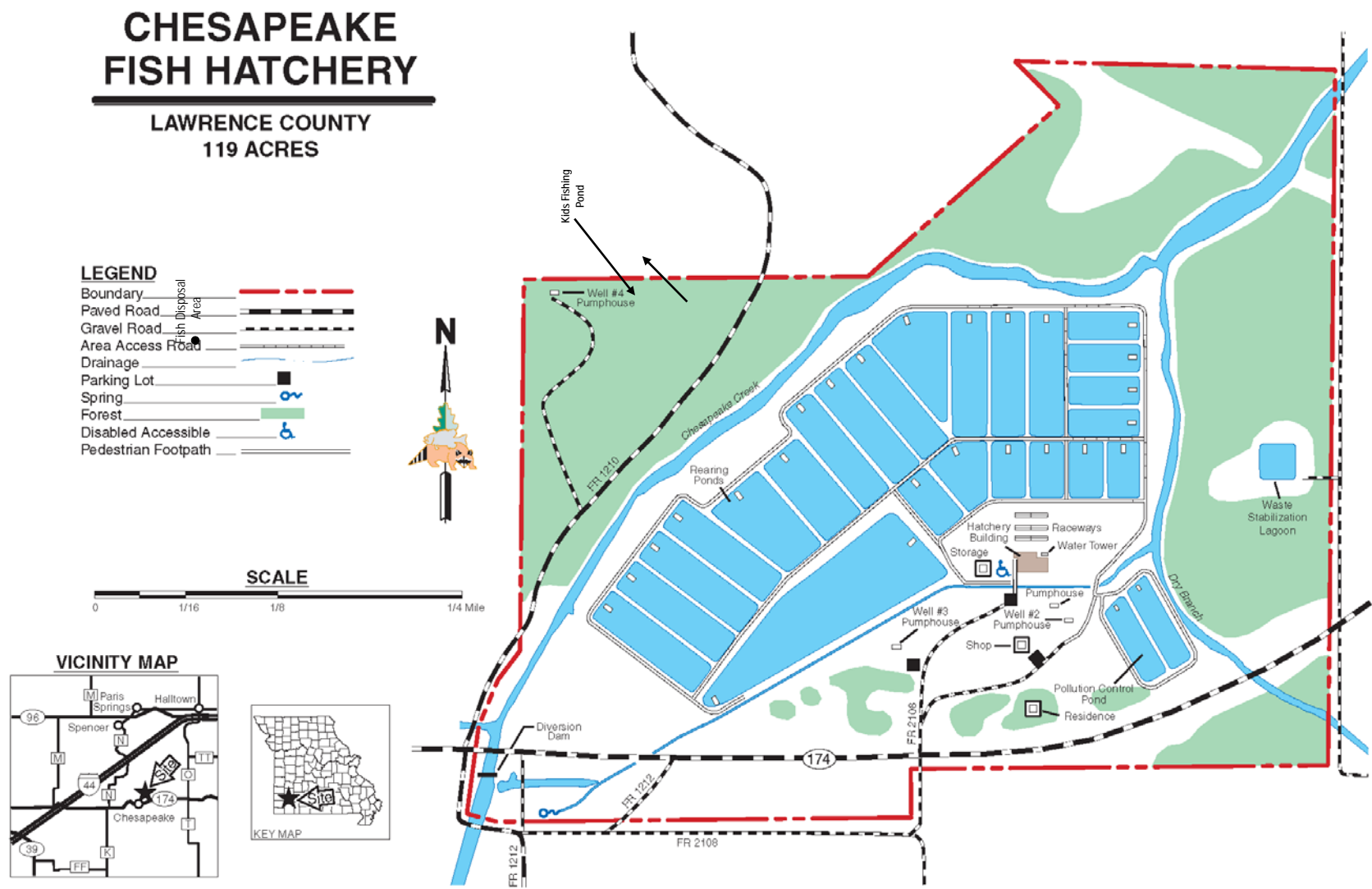
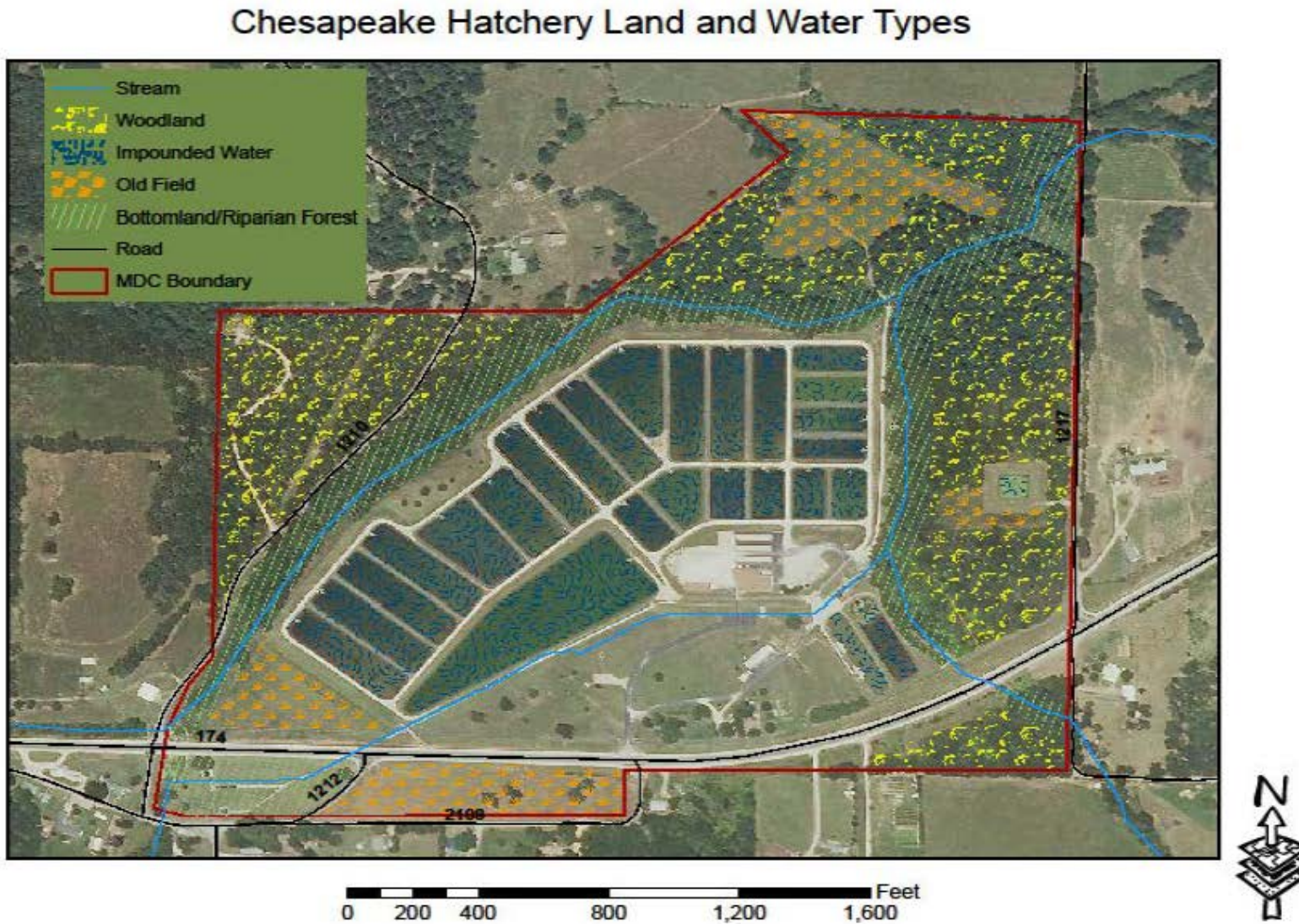


Figure 3. Current Land and Water Types



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